



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,486	04/12/2004	Gerry G. Hull	U75.12-0079	4939
164 7590 06/06/2008 KINNEY & LANGE, P.A. THE KINNEY & LANGE BUILDING 312 SOUTH THIRD STREET MINNEAPOLIS, MN 55415-1002				
EXAMINER				
KOCA, HUSEYIN				
ART UNIT		PAPER NUMBER		
3744				
MAIL DATE		DELIVERY MODE		
06/06/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/823,486

**Applicant(s)**

HULL, GERRY G.

**Examiner**

HUSEYIN KOCA

**Art Unit**

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1-3, 8, 11-14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shah (6,595,430) in view of Kuniyama (JP 2001-153891), and further in view of Cairns et al. (US 7,158,109).

In regard to claims 1, 13, and 18, Shah provides a display where the display is operable to illustrate a range of temperature on the first axis, and a range of times on the second axis (C-4, L-7-10). Shah also provides the temperature schedule and the temperature history in graphical format on the display (Fig. 2). Shah does not explicitly teach configuring a magnitude of the preset temperature range so that the at least one unshaded area shows a greater range in plus or minus degrees from the temperature set by the user. Kuniyama teaches defining an area that shows a greater range in plus or

minus value from the previously set value (Fig. 4). One having ordinary skill in the art knows that it is common to operate compressors based on the tolerance of the set temperature (For example, the set temperature for the room might be 68°F but the compressor can be set to start operating at either 70°F or 66°F depending on cooling or heating). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Shah thermostat so that it includes an area that shows a greater range in plus or minus value from the previously set value as taught by Kunihiisa in order to advantageously inform the user for the tolerance of the judgment area of the temperature. However Shah and Kunihiisa do not explicitly teach unshaded area within a shaded area. The general concept of providing unshaded area within a shaded area falls within the realm of common knowledge as obvious mechanical expedient and is illustrated by Cairns et al. which discloses active matrix display (Fig. 16); and one of ordinary skill in the art would have been motivated to include the use of unshaded area within a shaded area for illustration purposes to highlight or attract user's attention to an information.

In regard to claims 2 and 14, Shah teaches a line (220) indicating a past temperature on the display (Fig. 2)

In regard to claim 3, Shah teaches a step of showing a user-selectable future date on the display (C-4, L-20-24).

In regard to claim 8, Shah teaches displaying the current temperature (C-4, L-11-14). Shah does not explicitly teach using a temperature sensor to measure the temperature. In order for Shah to display the current temperature, Shah needs to

measure the temperature. Therefore, one having ordinary skill in the art at the time the invention was made would have known to use some type of temperature sensor, in order to advantageously provide a visual indicator of the temperature such that a user could adjust it accordingly.

In regard to claim 11, Shah teaches the step of receiving a range of temperatures selected by the user, and the range of temperatures are highlighted by the user and displayed on the display (C-3, L-38-42; C-4, L-41-44).

In regard to claim 12, Shah teaches the step of receiving range of dates selected by a user, and the range of dates are highlighted by the user and displayed on the display (C-3, L-49-56; C-4, L-41-44).

4. Claims 4, 5, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shah (6,595,430) in view of Kuniyisa (JP 2001-153891) and Cairns et al. (US 7,158,109), and further in view of Deutscher et al. (US2004/0001106 A1).

In regard to claims 4 and 15, Shah, Kuniyisa, and Cairns et al. teach most of the limitations of the claim but do not explicitly teach the step of showing the present time by using a time line, and the time line intersects the range of times provided on the second axis. Deutscher et al. use a timeline for the same reason as the applicant, which is to show the current time in graphical representation. Deutscher et al. teach the step of showing the present time by using a time line, and time line intersects the range of times provided on the second axis (0178, line 1-6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a time line to show the present time by intersecting the range of times provided on the second (time)

axis as taught by Deutscher et al. in Shah, Kunihisa, and Cairns et al. thermostat to see the current time in order to advantageously help the user to easily have an idea of the current time in a graphical thermostat when the time is only displayed as part of the graph.

In regard to claim 5, Shah provides at least one function button on the display, wherein the function button is selectable by the user (C-4, L-57-59).

5. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shah (6,595,430) in view of Kunihisa (JP 2001-153891) and Cairns et al. (US 7,158,109), and further in view of Deutscher et al. (US2004/0001106 A1) and Cottrell (6,502,758 B2).

In regard to claim 6, Shah, Kunihisa, Cairns et al., and Deutscher et al. teach most of the limitations of the claim but do not explicitly teach that using a rotating knob in order to input data. However, because the buttons or rotating knob were art-recognized equivalents at the time the invention in the control applications where it is used as inputting data, one of ordinary skill in the art would have found it obvious to substitute buttons with rotating control knob. Shah teaches using buttons to receive user input instead of a rotating control knob (C-4, L-57-59). Cottrell states that the knob can be replaced by buttons (C-4, L-63-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a control knob as taught by Cottrell in Shah's thermostat in order to eliminate using two different buttons to make adjustments.

In regard to claim 7, Cottrell teaches that the rotating control knob increases or decreases the current temperature (C-6, L-34-36).

6. Claims 8-10, 16, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shah (6,595,430) in view of Kunihiisa (JP 2001-153891) and Cairns et al. (US 7,158,109), and further in view of Ratz et al. (5,203,497).

In regard to claim 8, Shah, Kunihiisa, and Cairns et al. teach most of the limitations of the claim but do not explicitly teach measuring the temperature using temperature sensor. Ratz et al. clearly teach using a temperature sensor 14 to measure the temperature (C-2, L-27-29). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use temperature sensor to measure the temperature in a thermostat, in order to advantageously learn the current temperature and make the necessary adjustments to the thermostat.

In regard to claims 9 and 16, Ratz et al. teach reporting the temperature local to the at least one display to a device located remote from the at least one display (C-2, L-30-32, 57-59). Once the temperature is measured it sends signal to microprocessor 1, and microprocessor 1 provides a temperature signal to display (215) and the microprocessor 2 (Fig 1). Microprocessor 2 is connected to a HVAC system (Fig. 1). Ratz et al. thermostat is on a local area network, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to display the temperature at a remote location in order to advantageously inform the user when the user is in the remote location.

In regard to claims 10 and 17, Ratz et al. teach the step of communicating with the device via a network interface (C-2, L-57-59).

In regard to claim 19, Ratz et al. teach a communication jack (20) that permits communication with an HVAC system in communication with the thermostat (C-2, L-47-51).

In regard to claim 20, see claims 8 and 10.

### ***Response to Arguments***

7. Applicant's arguments filed 02/26/2008 have been fully considered but they are not persuasive.

1. Applicant argues the rejection under 35 U.S.C. 103(a) regarding to claims 1, 13, and 18 that the cited references do not disclose, taught or suggest the use of an unshaded area indicative of a present temperature range within a shaded area indicative of an operational time period. Applicant also states that Cairns et al. disclose a conventional manner using shaded and unshaded pixels, and are not related to display parameters specific to thermostat control.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Shah teaches a display where the display is



operable to illustrate a range of temperature on the first axis, and a range of times on the second axis (C-4, L-7-10). Shah also provides the temperature schedule and the temperature history in graphical format on the display (Fig. 2). Kunihisa cures the deficiencies of Shah by teaching an area that shows a greater range in plus or minus value from the previously set value (Fig. 4). Cairns et al. cures the deficiencies of Shah and Kunihisa by teaching the general concept of providing unshaded area within a shaded area. The prior art references Shah, Kunihisa, and Cairns et al. combined teach that one of ordinary skill in art would know the claimed invention. Applicant also argues that Office Action fails to identify a shaded region that defines an operational time period. However, Fig. 2 of Shah clearly shows a shaded region that defines an operational time period.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 3744

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUSEYIN KOCA whose telephone number is (571)272-3048. The examiner can normally be reached on Monday - Friday 9:00AM to 4:00PM.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler or Frantz Jules can be reached on (571) 272-4834 or (571) 272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HK/

/Cheryl J. Tyler/  
Supervisory Patent Examiner, Art Unit 3744